AF

Docket No.: 050395-0314 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	:	Customer Number: 20277
Hirokazu TAKAHASHI, et al.	:	Confirmation Number: 8808
Application No.: 10/522,577	:	Tech Center Art Unit: 2831
Filed: January 28, 2005	:	Examiner: Chau N. Nguyen

For: SHIELD CABLE, WIRING COMPONENT, AND INFORMATION APPARATUS

TRANSMITTAL OF APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is Appellant's Appeal Brief in support of the Notice of Appeal filed March 27, 2007. Please charge the Appeal Brief fee of $500.00 to Deposit Account 500417.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due under 37 C.F.R. 1.17 and 41.20, and in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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APPEAL BRIEF

Mail Stop Appeal Brief
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P.O. Box 1450
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Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed March 27, 2007, wherein Appellants appeal from the Primary Examiner's rejection of claims 1 and 6-8.

I. Real Party In Interest

This application is assigned to Sumitomo Electric Industries Ltd., recorded on January 28, 2005, at Reel 017213, Frame 0009.

II. Related Appeals and Interferences

Appellants are unaware of any related Appeal or Interference.

III. Status of Claims

Claims 1 and 6-8, all pending claims, have been finally rejected. It is from the final rejection of claims 1 and 6-8 that this Appeal is taken. The Amendment filed January 4, 2007, will be entered for

purpose of the Appeal according to the February 14, 2007 Advisory Action. Claims 1 and 6-8 are copied in the Appendix to this Appeal Brief.

IV. Status of Amendments

An Amendment dated January 4, 2007, has been filed subsequent to the issuance of the Final Office Action dated October 4, 2006 to incorporate the limitations recited in dependent claims 3 and 5 into independent claim 1, and cancel claims 3-5. The February 14, 2007 Advisory Action indicates that this Amendment will be entered for the purpose of Appeal.

V. Summary of Claimed Subject Matter

The subject matter in the present application is related to a shield cable, and a wiring component and an information apparatus which may be suitable for signal transmission in the information apparatus having a hinged portion such as a laptop personal computer, cellular phone, and video camera equipped with a liquid crystal display (page 1, lines 7-11). The issues addressed are a disconnection of a signal conductor and a short-circuit between the signal conductor and a shield layer (page 3, lines 10-15).

Independent claim 1 recites a shield cable (1) (see, e.g., Figs. 1 A and 1B). The shield cable comprises:

two insulated wires (2), having diameters not more than 0.3 mm, and covered with a shield conductor (5 and 6) and a sheath (8) (see, e.g., Figs. 1A and 1B; page 5, line 20 to page 6, line 10),

each of said insulated wires (2) comprising a signal conductor (3) covered with an insulator (4) (see, e.g., Figs. 1A and 1B; and page 6, lines 6-10),

said shield conductor consisting of a plurality of shield layers (5 and 6) (see, e.g., Figs. 1A and 1B; and page 5, line 20 to page 6, line 5), wherein

a first shield layer (5) constituting the innermost layer of said plurality of shield layers consists of a plurality of conductors (5a) spirally wound at a pitch of 10 to 13 mm (see, e.g., Fig. 1B; page 6, lines 10-15; and page 13, Table I));

a second shield layer (6) is formed by spirally winding a plurality of conductors (6a) on said first shield layer (5) in a counter winding direction relative to that of said first shield layer (see, e.g., Fig. 1B; page 6, line 16 to page 7, line 5); a scroll pitch of said second shield layer is not more than a scroll pitch of said first shield layer (see, e.g., page 9, lines 7-19); and

said sheath (8) and said plurality of shield layers (5 and 6) integrally cover said insulated wires (2).

Claim 6 recites a wiring component (11) (see, e.g., Fig. 4). The wiring component includes a plurality of shield cables (1) (see claim 1) bundled and a connecting terminal portion (14) provided at least at one end of said wiring component (11). Claim 7 recites an information apparatus (see, e.g., Fig. 6) having a shield cable (1) (see claim 1). The shield cable is used for a signal wiring to pass through a hinged portion (64) of said information apparatus. Claim 8 recites an information apparatus (see, e.g., Fig. 6) having a wiring component (11) (see claim 6). The wiring component (11) is used for a signal wiring to pass through a hinged portion (64) of said information apparatus.

VI. Grounds of Rejection To Be Reviewed By Appeal

Claims 1 and 6-8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,677,534 ("Yamamoto") in view of U.S. Patent No. 5,463,188 ("Nohmi").

VII. **Argument**

Rejection of claims 1 and 6-8 under 35 U.S.C. §103(a) over Yamamoto in view of Nohmi

Legal precedent is well developed on the subject of obviousness in the application of a rejection under 35 U.S.C. §103. It is incumbent upon the examiner to factually support a conclusion of obviousness. *In re Mayne,* 104 F.3d 1339, 41 USPQ2d 1451 (Fed. Cir. 1997*); In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The examiner must provide a reason why one having ordinary skill in the art would have been led to modify a particular prior art reference in a particular manner to arrive at a particular claimed invention; *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998). *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967).

In order to establish the requisite motivation, "clear and particular" factual findings must be made as to a specific understanding or specific technological principle which would have realistically compelled one having ordinary skill in the art to modify a particular reference to arrive at the claimed invention based upon facts-- not generalizations. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 UPSQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). What may or may not be known in general does not establish the requisite realistic motivation for obviousness; see *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995). Merely identifying features of a claimed invention in disparate prior art references does not, automatically, establish the requisite motivation for combining references in any

particular manner. *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999); *Grain Processing Corp. v. American-Maize Products Co.*, 840 F.2d 902, 5 USPQ2d 1788 (Fed. Cir. 1988).

Claim 1 is an independent claim and is reproduced as follows:

1. A shield cable comprising:

two insulated wires, having diameters not more than 0.3 mm, and covered with a shield conductor and a sheath,

each of said insulated wires comprising a signal conductor covered with an insulator,

said shield conductor consisting of a plurality of shield layers, wherein

a first shield layer constituting the innermost layer of said plurality of shield layers consists of a plurality of conductors spirally wound at a pitch of 10 to 13 mm;

a second shield layer is formed by spirally winding a plurality of conductors on said first shield layer in a counter winding direction relative to that of said first shield layer; a scroll pitch of said second shield layer is not more than a scroll pitch of said first shield layer; and

said sheath and said plurality of shield layers integrally cover said insulated wires.

In the February 14, 2007 Advisory Action, the Examiner simply asserted, "the combination of Yamamoto et al. and Nohmi et al. teaches the invention as claimed" without providing any specific reason. Accordingly, Appellants address the Examiner's assertion in the October 4, 2006 Final Office Action reproduced below:

> Yamamoto et al. discloses a shield cable comprising: two insulated wires, having diameters not more than 0.3 mm (col. 5, lines 21-22) and covered with a shield conductor and a sheath, each of said insulated wires comprising a signal conductor covered with an insulator, said shield conductor consisting of a plurality of shield layers (5, 6, 9), wherein a first shield layer constituting the innermost layer (5) of said plurality of shield layers consists of a plurality of conductors spirally wound at a pitch; and said sheath and said plurality of shield layers integrally covering said insulated wires (re claim 1).
>
> Yamamoto et al. does not disclose the pitch of 10 to 13 mm. Nohmi et al. discloses a shield cable comprising a plurality of shield layers, wherein the innermost shield layer (4) is comprised of a plurality of conductors spirally wound at a pitch of 10 to 13 mm (col. 1, lines 48-50 and col. 2, lines 56-58). It would have been obvious to one skilled in the art to modify the innermost shield layer of Yamamoto et al. to have a winding pitch of 10 to 13 mm to prevent the spirally wound conductors from being broken even when the cable is being twisted or bent as taught by Nohmi et al.

Nohmi discloses a coaxial cable having one center conductor. It is submitted that this feature as disclosed by Nohmi cannot simply be applied to Yamamoto, which discloses a coaxial cable having two internal conductors. Moreover, in Nohmi a winding pitch is linked to a bending radius (column 1, lines 47-50) and the bending radius of Nohmi's coaxial cable differs from that of Yamamoto's coaxial cable. Therefore, if the winding pitch of the laterally-wound shield of Yamamoto's coaxial cable were to be modified with Nohmi's coaxial cable, this modification would result in a maximum pitch that is less than the claimed range of 10 to 13 mm (see the previous response, submitted on March 29, 2006, page 6, lines 3 to 16, reproduced below).

> *The rejection is respectfully traversed for the reason that such a substitution of diameter size for the wire of the Nohmi disclosure would not have resulted in the claimed combination. Nohmi states at column 1, lines 47-56, that the winding pitch of each transverse winding (i.e., shield layer) is to be in a range of 0.8 to 2.0 times the bending radius. In the disclosed examples of Nohmi, an insulated wire having an outer diameter of 0.7 mm and a shield cable including the insulated wire has a bending radius of 4 mm. The pitch range disclosed by Nohmi for the 4 mm bending radius is thus between 0.8 x 4 and 2.0 x 4, i.e., between 2.8[1] and 8.*
>
> *The 0.7 mm diameter wire is outside the claimed range of less than 0.3 mm. Since the bending radius of a shield cable is dependent on the diameter of the insulated wire, the substitution of the 0.21 mm diameter wire of Yamamoto for the 0.7 mm diameter wire in Nohmi would result in a bending radius of considerably less than 4 mm. This modification would result in a maximum pitch that is less than the claimed range of 7 to 13 mm. It is submitted, therefore, that the combined teachings of Nohmi and Yamamoto would not have suggested the invention now recited in claim 1.*

Independent claim 1 further includes the limitations recited in canceled dependent claims 3 and 5. The Examiner's assertion as to claims 3 and 5 in the October 4, 2006 Final Office Action is reproduced below:

> Yamamoto et al. also discloses the second shield (6) being formed by spirally winding a plurality of conductors on the first shield layer in a counter winding direction relative to

[1] The value "2.8" is an inadvertent typographical error. Since this value is obtained by the product of 0.8 and 4, it should be --3.2--.

> that of the first shield layer (col. 2, lines 16-19) (re claim 3), ..., the scroll pitch of the second shield layer being not more than the scroll pitch of the first shield layer (col. 7, lines 28-39) (re claim 5), ...

Paragraph 2 of the October 4, 2006 Final Office Action (emphasis added). Appellants emphasize that the applied combination does not teach a shield cable including, at a minimum, "a second shield layer is formed by spirally winding a plurality of conductors on said first shield layer in a counter winding direction relative to that of said first shield layer; a scroll pitch of said second shield layer is not more than a scroll pitch of said first shield layer," recited in claim 1.

Yamamoto discloses,

> The first laterally-wound shield 51 is composed of 40 silver-plated copper alloy wires acting as wires 5a, 5b, . . . each having a wire diameter φs of 0.03 mm which are spirally laterally wound around the outer periphery of the two parallel cores 4a and 4b at a pitch of 6 mm.
>
> The second laterally-wound shield 52 is composed of 44 silver-plated copper alloy wires acting as the wires 6a, 6b, . . . each having a wire diameter φs of 0.03 mm which are spirally laterally wound around the outer periphery of the first laterally-wound shield 51 at a pitch of 5 mm in the *same direction* as that of the first laterally-wound shield 51. The second laterally-wound shield 52 is applied in the *same direction* as that of the first laterally-wound shield 51. Accordingly, the slits formed between the respective wires 5a, 5b, . . . , 6a, 6b, can be reduced in size by winding the wires 6a, 6b . . . at the pitch smaller than that of the wires 5a, 5b, . . . of the first laterally-wound shield 51.

Column 7, lines 28-45 (emphasis added). The Examiner asserted that Yamamoto in column 7, lines 28-39 teaches that the second laterally-wound shield 52 is formed by spirally winding conductors in a counter winding direction relative to that of the first laterally-wound shield 51, and has a pitch not more than that of the first laterally-wound shield 51. However, as cited above, Yamamoto discloses that the second laterally-wound shield 51 is formed by spirally winding conductors in the *same direction* as that of the first laterally-wound shield 51.[2]

[2] Yamamoto in Fig. 6 appears to show that the second laterally-wound shield 52 is formed spirally winding in the different direction from that of the first laterally-wound shield 51. However, the second laterally-wound shield 52 is mistakenly

Moreover, Yamamoto discloses as follows:

> The first laterally-wound shield 5 is composed of 40 silver-plated copper alloy wires acting as the wires 5a, 5b, . . . each of which has a wire diameter φs of 0.03 mm and which are laterally spirally wound around the outer periphery of the cores 4a and 4b disposed in parallel with each other at a pitch of 6 mm.
>
> The second laterally-wound shield 6 is composed of 44 silver-plated copper alloy wires acting as the wires 6a, 6b, . . . each having a wire diameter φs of 0.03 mm which are spirally laterally wound around the outer periphery of the first laterally-wound shield at a pitch of 6 mm in a direction opposite to that of the first laterally-wound shield 5.

Column 5, lines 31-36 (emphasis added). The above paragraphs teach that the second laterally-wound shield 52 is formed by spirally winding conductors in a counter winding direction relative to that of the first laterally-wound shield 51, but does not have a pitch not more than that of the first laterally-wound shield 51.

In contrast, claim 1 requires that a second shield layer is formed by spirally winding a plurality of conductors on the first shield layer in a counter winding direction relative to that of the first shield layer, and a scroll pitch of the second shield layer is not more than a scroll pitch of the first shield layer. This configuration can contribute toward prevention of a disconnection of a signal conductor and a short-circuit between the signal conductor and a shield layer.

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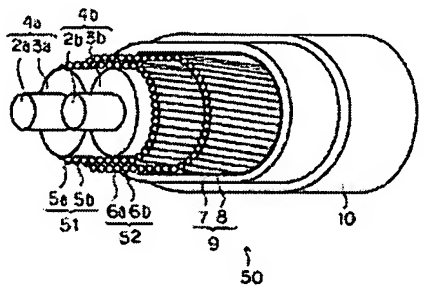
depicted in Fig. 6. The correctly depicted second laterally-wound shield 52 is found in Fig. 6 of the priority document of Yamamoto (Japanese patent application publication No. 2003-36740), see below.

【図６】



Furthermore, Nohmi discloses a coaxial cable, which does not teach, at a minimum, a scroll pitch of the second shield layer is not more than a scroll pitch of the first shield layer, as claimed. For example, Nohmi discloses that primary transverse winding 4 which is the innermost layer has a winding pitch P=4.5 mm, whereas secondary transverse winding 5 has a winding pitch P=5.7 mm (see Manufactured Example 1 in column 3). The other examples also teaches that a winding pitch of secondary transverse winding 5 is greater than that of primary transverse winding 4. In contrast, claim 1 recites that a scroll pitch of the second shield layer is not more than a scroll pitch of the first shield layer.

It is, therefore, submitted that the claimed invention would not have been suggested by a consideration of the references, taken individually or collectively. The applied combination of Yamamoto and Nohmi would not have led an artisan to a modification that would result in the claimed invention.

Claim 6 is dependent from claim 1 and additionally recites:

> a wiring component in which a plurality of shield cables according to claim 1 are bundled and a connecting terminal portion is provided at least at one end of said wiring component.

Appellants submit that neither Yamamoto nor Nohmi teaches these additional requirements, nor have they been addressed in the Office Action. It is submitted, therefore, that the rejection of claim 6 fails both for the lack of disclosure in the applied references of all requirements of parent claim 1, and for the additionally recited elements.

Claim 7 is dependent from claim 1 and additionally recites:

> an information apparatus having a shield cable according to claim 1, said shield cable being used for a signal wiring to pass through a hinged portion of said information apparatus.

Appellants submit that neither Yamamoto nor Nohmi teaches these additional requirements, nor have they been addressed in the Office Action. It is submitted, therefore, that the rejection of claim 7 fails both for the lack of disclosure in the applied references of all requirements of parent claim 1, and for the additionally recited elements.

Claim 8 is dependent from claim 1 and additionally recites:

> an information apparatus having a wiring component according to claim 6, said wiring component being used for a signal wiring to pass through a hinged portion of said information apparatus.

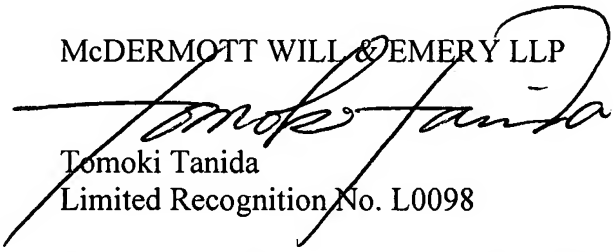
Appellants submit that neither Yamamoto nor Nohmi teaches these additional requirements, nor have they been addressed in the Office Action. It is submitted, therefore, that the rejection of claim 8 fails both for the lack of disclosure in the applied references of all requirements of parent claim 1, and for the additionally recited elements.

VIII. Conclusion

For all of the foregoing reason, Appellant respectfully submits that the grounds of rejection of the claims on appeal is in error and should be reversed.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



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IX. CLAIMS APPENDIX

(Appealed Claims 1 and 6-8)

1. A shield cable comprising:

two insulated wires, having diameters not more than 0.3 mm, and covered with a shield conductor and a sheath,

each of said insulated wires comprising a signal conductor covered with an insulator,

said shield conductor consisting of a plurality of shield layers, wherein

a first shield layer constituting the innermost layer of said plurality of shield layers consists of a plurality of conductors spirally wound at a pitch of 10 to 13 mm;

a second shield layer is formed by spirally winding a plurality of conductors on said first shield layer in a counter winding direction relative to that of said first shield layer; a scroll pitch of said second shield layer is not more than a scroll pitch of said first shield layer; and

said sheath and said plurality of shield layers integrally cover said insulated wires.

6. A wiring component in which a plurality of shield cables according to claim 1 are bundled and a connecting terminal portion is provided at least at one end of said wiring component.

7. An information apparatus having a shield cable according to claim 1, said shield cable being used for a signal wiring to pass through a hinged portion of said information apparatus.

8. An information apparatus having a wiring component according to claim 6, said wiring component being used for a signal wiring to pass through a hinged portion of said information apparatus.

X. EVIDENCE APPENDIX

No evidence has been submitted of record under 37 CFR 1.130, 1.131 or 1.132.

XI. RELATED PROCEEDINGS APPENDIX

No decisions have been rendered in Related Appeals or Interferences.